ACCESSION NR: AP4033403 S/0076/64/038/003/0702/0707

AUTHORS: Kornilov, A.N. (Moscow); Zaykin, I.D. (Moscow); Skuratov, S.M. (Moscow); Dubrovskaya, L.B. (Moscow); Shveykin, G.P. (Moscow)

TITLE: Standard heats of formation of tentalum carbides from Ta sub 2 C phase

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 3, 1964, 702-707

TOPIC TAGS: tantalum carbide, heat of combustion, heat of formation, Ta sub 2 C phase, impurity

ABSTRACT: The heats of combustion of tantalum carbide with $TaC_{0.455}$ (1) and $TaC_{0.507}$ (2) composition from the Ta_2C phase have been determined. The carbides had less than $5 \cdot 10^{-2}$ weight % of Sn, Cu and Mn impurities and less than $1 \cdot 10^{-3}$ weight % of Sb, Ni, Mg, Zr, Ca, Al, W, Pb, Bi and Cd impurities. The carbon content of the carbides was determined with 0.01 - 0.02 % accuracy from the content of CO_2 produced upon combustion of carbide in a stream of oxygen at 1050C. The O, N and H content was determined by the vacuum fusion method with accuracy ± 0.02 % for O and N and ± 0.001 % accuracy for H. The Nb,

Card 1/3

ACCESSION NR: AP4033403

Si, Ti and Fe content was determined spectrographically with accuracy of ± 0.01 - 0.02 %. The other impurities were determined by spectral analysis with accuracy of ± 0.001 - 0.005 %. By x-ray phase analysis it was established that compounds 1 and 2 are homogeneous and have hexagonal lattice with the following lattice parameters: a=3.104 Å, c=4.936 Å and a=3.105 Å, c=4.936 Å respectively. The conditions for the combustion of carbides with respect to tantalum and carbon were chosen to be approximately 100 %. The errors in the values for the ΔH^0 of formation for(1) and ΔH^0 of formation for(2) include the errors of determination of the heat of combustion of carbides, errors of the determination of ΔH^0 of formation of Ta_2O_5 and ΔH^0 of formation of CO_2 and the errors of the index for carbon in the carbide formulae. The calculated standard heats of formation for(1) and (2) from tantalum metal and β-graphite were: ΔH^0 of formation for 1 is equal to -23.3 ± 1.0 kcal/g-formula wt. and ΔH^0 of formation for 2 is equal to -25.1 ± 1.0 kcal/g-formula wt. Orig. art. has: 3 tables.

Card 2/3

ACCESSION NR: AP4033403

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University im. M.V. Lomonosov) Institut khimii Ural'skogo filiala AN SSSR (Institute of Chemistry of the Ural Branch of the Academy of Sciences SSSR)

SUBMITTED: 20Aug63 ENCL: 00

SUB CODE: IC NR REF SOV: 012 OTHER: 003

Card 3/3

L 20104-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(j)/EWP(t)/EWP(b) Pc-4/Pr-4/
Ps-4/P1-4/Pu-4 IJP(c)/RPL/AEDC(a)/SSD/AFWL/AS(mp)-2/AFMDC/ESD(t) JD/WW/JW/
ACCESSION NR: AP4044442 JG/RM S/0076/64/038/008/2008/2012

AUTHOR: Kornilov, A. N.(Moscow); Leonidov, V. Ya. (Moscow); Skuratov, S. M. (Moscow)

TITLE: Standard heat of formation of tantalum pentoxide

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 8, 1964, 2008-2012

TOPIC TAGS: tantalum pentoxide, enthalpy, calorimetry, heat of formation

ABSTRACT: The purpose of this work was to resolve the discrepancy existing [illegible] heat of formation of Ta_2O_5 [illegible] different [illegible] purity tantalum in the form [illegible] was shav-ings was used for the determination in a calorimetric bomb. Traces of iron on the surface of tantalum, which is picked up during shaving of the metal, is remov- [illegible] for 0.5 hours. Other impurities [illegible] CO_2 and H_2O [illegible]

[illegible] NR. AP4044442

[illegible] course of 2.5-3 hours. It was determined that for the reaction 2Ta [illegible] Ta_2O_5(α-modification) ΔH^0 [illegible] ± 0.4 kcal [illegible] 1 table

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosov [illegible]neskaya laboratoriya im. V. F. Luginina (Moscow State University [illegible]chemistry Laboratory)

SUBMITTED: 19Oct63 ENCL: 00

[illegible] GC NO REF SOV: 005 OTHER: 010

Card 2/2

EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(j)/EWP(t)/EWP(b) Pc-4/Pr-4/
[illegible]/RPL/ASDC(a)/SSD/APWL/AS(mp)-2/ASWDC/TSD(t) RD/WW/JW/

ACCESSION NR: AP4044443 S/0076/64/038/008/2013/2018

AUTHOR: Kornilov, A. N. (Moscow); Leonidov, V. Ya. (Moscow); Skuratov, S. M. (Moscow)

TITLE: Standard heat of formation of niobium pentoxide

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 8, 1964, 2013-2018

TOPIC TAGS: niobium pentoxide, enthalpy, calorimetry, heat of formation

ABSTRACT: The standard heat of formation of Nb_2O_5 was determined by a direct [illegible] combustion in O_2. [illegible] special method was [illegible] completeness [illegible] It was determined for:

$2Nb(crystal) + 5/2\ O_2(g) = Nb_2O_5$ (β - modification)

$H^o_{298} = -453.5 \pm 0.4$ kcal.

Card 1/2

L 20105-65
ACCESSION NR: AP4044443

Orig. art. has: 2 graphs and 1 table

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova Termokhimicheskaya laboratoriya im. V. F. Luginina (Moscow State University Thermochemical Laboratory)

SUBMITTED: 19Oct63 ENCL: 00

SUB CODE: GC, TD NO REF SOV: 012 OTHER: 008

Card 2/2

KORNILOV, A.N.; VOLKOVA, I.M.; SKURATOV, S.M.

Dosage of electrical energy by means of a condenser. Zhur. fiz. khim. 38 no.12:3035-3036 D '64. (MIRA 18:2)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

L 36445-66 EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) AT/WH/WW/JW/JD/JG

ACC NR: AP6018071 (N) SOURCE CODE: UR/0076/66/040/005/1070/1076

AUTHOR: Kornilov, A. N.; Zaykin, I. D.; Skuratov, S. M.; Shveykin, G. P.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstveny'y universitet); Institute of Chemistry, Ural Affiliate AN SSSR (Institut khimii Uralskogo filiala AN SSSR)

TITLE: Standard heats of formation of niobium carbides from the NbC phase

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 5, 1966, 1070-1076

TOPIC TAGS: niobium compound, carbide, heat of formation, heat of combustion

ABSTRACT: Standard heats of formation (-ΔH) of niobium carbides (NbC_x; where: x = 0.838, 0.783, and 0.739) from the NbC phase were calculated on the basis of experimentally determined heats of combustion of these carbides in an oxygen stream at 1050°C. High accuracy of the -ΔH values was assured by using high purity carbide samples and by taking into account the formation (in the course of combustion) of CO_2, CO, H_2O, and solid products. The individual carbides used were homogeneous and their respective lattice parameters were: 4.458 Å for $NbC_{0.838}$, 4.454 Å for

Card 1/2 UDC: 541.11

L 36445-66

ACC NR: AP6018071

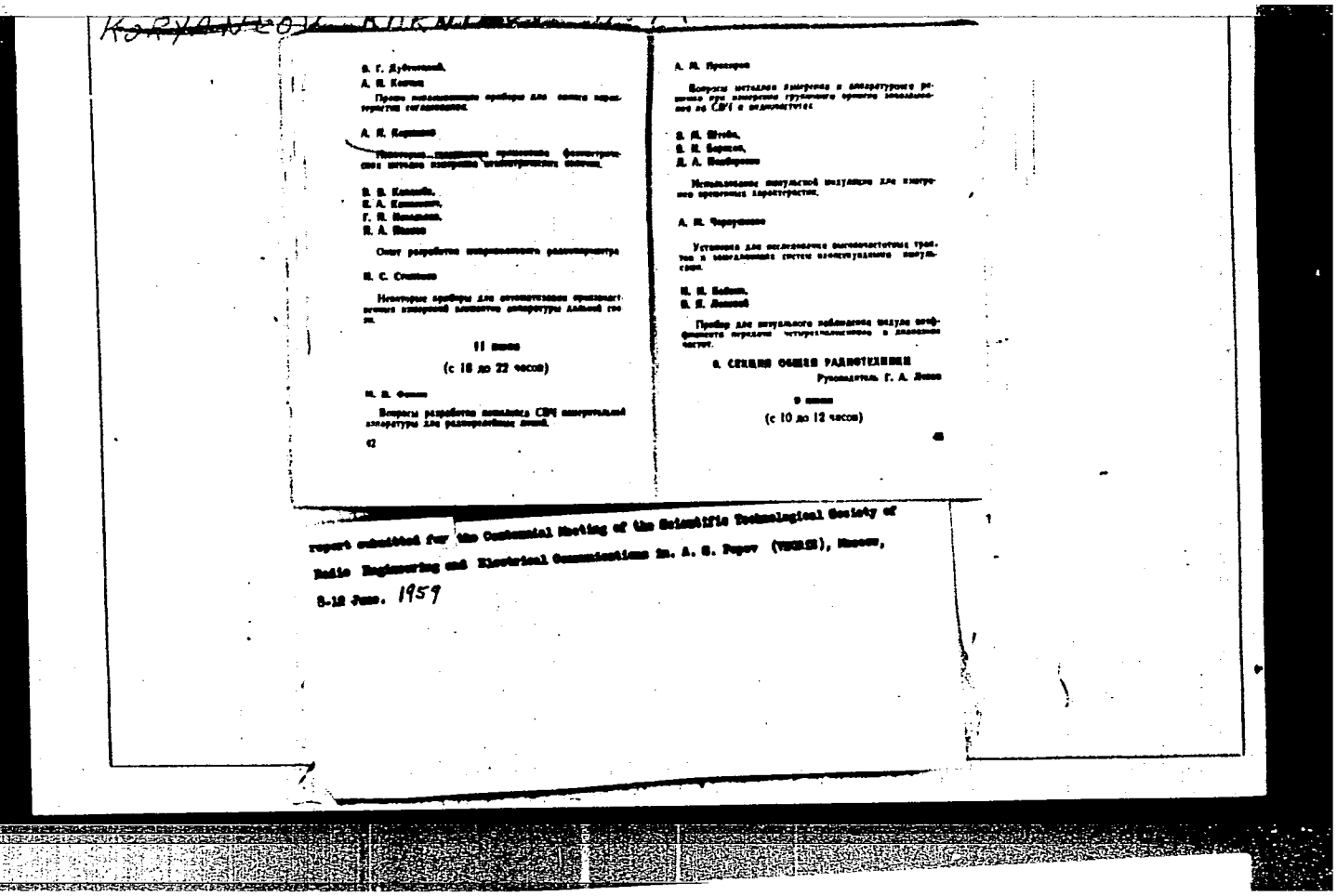
$NbC_{0.783}$, and 4.442 Å for $NbC_{0.739}$. For the series of eight samples of each carbide, the average heats of combustion (at 1050°C) were found to be: 2667.8±0.8 cal/g for $NbC_{0.838}$, 2642.1±1.5 cal/g for $NbC_{0.783}$ and 2626.2±1.3 for $NbC_{0.739}$. The calculated standard heats of formation (-ΔH) of niobium carbides from metallic niobium and β-graphite are: -30.0±0.5 kcal/g for $NbC_{0.838}$, -28.9±0.7 kcal/g for $NbC_{0.783}$, and -28.7±0.5 kcal/g for $NbC_{0.739}$. The general formula for calculating standard heats of formation of niobium carbides from NbC phase is: -ΔH formation NbC_x = 18.19+1400x kcal/g. Orig. art. has: 4 tables.

SUB CODE: 07/ SUBM DATE: 23Dec64/ ORIG REF: 012/ OTH REF: 003

Card 2/2

RUKMAN, G.I.; KORNILOV, A.P.; KHRYUKIN, V.S.; BRAVINSKIY, V.G.

Radio interference (phase metering) circuits used in measuring engineering. Izm. tekh. no.4:77-79 Jl-Ag '57. (MLRA 10:8)
(Interferometer)



Report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNIIRE), Moscow, 8-12 June. 1959

SOV/120-59-2-38/50

AUTHORS: Kornilov, A.P., and Khryukin, V.S.

TITLE: An Instrument for Measuring Small Mechanical Displacements (Pribor dlya izmereniya malykh mekhanicheskikh peremeshcheniy)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 2, pp 128-131 (USSR)

ABSTRACT: The instrument described may be used to measure displacements of the order of 2 x 10^{-6} mm. The displacements are transformed into changes in the capacity of a standard condenser. The instrument has three ranges of sensitivity so that measurements can be made between 10^{-3} and 2 x 10^{-5} mm. Details of one of the standard variable condensers are shown in Fig 4. One plate of the condenser is fixed and the other can be adjusted by means of the micrometer, 11. This particular condenser was used to control the diameter of very thin wires. A block diagram of the electrical circuit is shown in Fig 1. As indicated in this figure, a sinusoidal voltage from a master oscillator is applied to a phase detector. At the same time another voltage is applied to the phase detector via the phase shifting four-terminal network one of whose elements is

Card 1/2

the standard condenser. The effect of the displacement to be measured is to alter the capacity of the standard condenser, and, consequently, the phase shift between the two signals received by the phase detector. The differential amplifier which follows the phase detector gives the difference between the two rectified voltages from both the channels, one of which contains the working standard condenser and the other a compensating condenser. This two-channel differential arrangement eliminates temperature effects. The basic electronic circuit is shown in Fig 2 and a photograph of a typical assembly is given in Fig 3.

There are 5 figures and 2 Soviet references.

SUBMITTED: March 13, 1958

KORNILOV, Aleksey Vasil'yevich

[Measures taken by the Communist Party for the further development of industry and agriculture in the fifth five-year plan; a course of lectures on the history of the CPSU] Meropriiatiia Kommunisticheskoi partii po dal'neishemu razvitiiu promyshlennosti i sel'skogo khoziaistva v piatoi piatiletke; iz kursa lektsii po istorii KPSS. Moskva, Izd-vo Mosk.univ., 1959. 25 p. (MIRA 13:6)
(Russia--Economic policy)

KORNILOV, A.V.

USSR/ Chemistry - Quantitative analysis

Card 1/1 Pub. 43 - 67/97

Authors : Pisarev, V. D.; Kornilov, A. V.; and Kostrova, Z. P.

Title : Spectral analysis of stannous babbits

Periodical : Izv. AN SSSR. Ser. fiz. 18/2, 284-285, Mar-Apr 1954

Abstract : Brief announcement is made on the development of a method for quantitative spectral analysis of babbits (Sn-Sb-Cu alloys) for their content of elements (Cu, Sb, Pb, Bi, Fe and As). The rapidity and accuracy of the spectral analysis method were found to satisfy the requirements of industry. Table.

Institution : .....

Submitted : .....

PISAREV, V.D.; KORNILOV, A.V.; KOSTROVA, Z.P.

Spectrum analysis of black tin. Izv.AN SSSR.Ser.fiz.19 no.2:210-211 Mr-Ap '55. (MLRA 9:1)

1.Novosibirskiy institut inzhenerov zheleznodorozhnogo transporta.
(Tartu--Spectrum analysis--Congresses)

Category : USSR/Optics - Optical methods of analysis. Instruments K-7

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 2520

Author : Rivkina, M.A., Pisarev, V.D., Kornilov, A.V., Kostrova, Z.P., Kotel'nikova, L.A., Levchenko, M.P.

Inst : Novosibirsk Inst. of Railroad Transport Engineers and Novosibirsk Tin Plant, USSR

Title : Spectral Analysis of Tin

Orig Pub : Zavod. laboratoriya, 1955, 21, No 9, 1081-1083

Abstract : Description of a method for the spectral analysis of tin of various grades with impurities of Cu, Pb, As, Sb, Bi, and Fe. Standard samples for the determination of Bi, Pb, Sb, and Cu were obtained by diluting the dual alloys (one of these elements and tin) in pure tin. Standards for As and Fe were prepared separately. A description of the analysis procedure is given. The mean arithmetic error in the determination of the impurities in the tin does not exceed $\pm$ 7 -- 9%. The analysis of a single sample for six elements lasts 50-60 minutes.

Card : 1/1

KORNILOV, A.V.

Spectrum analysis of tin slags. ... Kornilov, and Z. P. Kostrova (Tin Plant, Novosibirsk). *Zavodskaya Lab.* 22, 198-9(1956). The method of spectrum analysis of Sn slags, which proved satisfactory, involved the soln. of the slag after mixing with ... and borax, and the soln. of the melt in HCl ... [illegible]

SOV/58-59-5-11878

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, p 281 (USSR)

AUTHORS: Pisarev, V.D., Kornilov, A.V., Kostrova, Z.P., Bragina, T.D.

TITLE: Spectral Analysis of Tin Slags

PERIODICAL: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, 1958, Nr 36, pp 269-272

ABSTRACT: The authors describe a spectrographic method of analyzing tin slags, samples of which have been solubilized. They used an ISP-22 spectrograph and an IT-2 generator as the excitation source. The divergence from the results of chemical analysis is characterized by a mean arithmetical error of 3.2 - 7.5%.

Card 1/1

L 44193-66 EWT(m)/EWP(w)/T/EWP(t)/ETI JD

ACC NR: AP6015699 (N) SOURCE CODE: UR/0413/66/000/009/0097/0098

38
B

INVENTOR: Balashov, V. A.; Dotsenko, A. M.; Kornilov, A. V.

ORG: none

TITLE: Method of studying the development of fatigue cracks. Class 42, No. 181361

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 97-98

TOPIC TAGS: cracking, crack propagation, fatigue crack

ABSTRACT: This Author Certificate introduces a method of studying the development of fatigue cracks by applying a sensing element to the area of possible cracking. The sensing element consists of several parallel conductors with a given law of variation of space between them. The conductors are arranged perpendicular to the possible direction of crack propagation. In order to obtain diagrams showing the relationship between the length of the propagating crack and the number of load-

Card 1/2 UDC: 620.178.3

L 44193-66

ACC NR: AP6015699

ing cycles automatically, electric signals proportional to the spaces between the conductors of the sensing element are arranged to be transmitted to the recorder which simultaneously receives the periodic sequence of electric pulses from the cycle counter. The time between these pulses is proportional to a specific number of loading cycles of the test piece (see Fig. 1). Orig. art. has: 1 figure. [Translation] [LD]

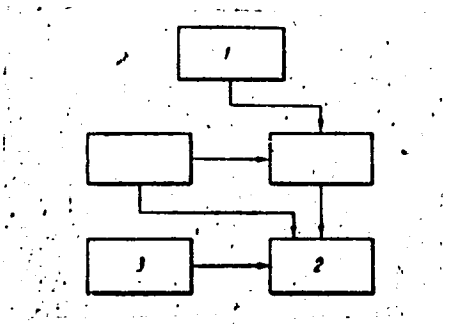


Fig. 1. Device for studying the propagation of fatigue cracks. 1—Sensing element; 2—automatic recorder; 3—cycle counter

SUB CODE: 20/ SUBM DATE: 27Mar65/

Card 2/2

KOSHILOV, A. L.

Dissertation: "Investigation of Steam Trawl Windlasses." Cand Tech Sci, Moscow Technical Inst of the Fish Industry and Economy imeni A. I. Mikoyan, 27 Apr 54. (Vechernyaya Moskva, Moscow, 16 Apr 54)

SO: SUM 243, 19 Oct 1954

KORNILOV, B.A., nauchnyy sotrudnik

Origin of continents. Nauka i zhizn' 25 no.4:79 Ap '58.
(MIRA 11:5)

1. Institut geografii AN SSSR.
(Continents)

3(5) SOV/10-59-4-9/29

AUTHOR: Kornilov, B.A.

TITLE: The History of Relief Evolution in the South-Eastern Part of the Aldan Highland

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya 1959, Nr 4, pp 79 - 84 (USSR)

ABSTRACT: The article deals with geological formation of the south-eastern fringe land of the Aldan Highland. Being 900 to 1,300 m high, this plateau has several depressions, mountain ranges, bare rock groups, and individual bare rocks 300 to 800 m high. In the south the Aldan Highland sharply slopes toward the Upper Zeya depression, with the borderline of the Amur-Aldan water divide running along the edge of that depression. Contrary to the topographical inclination, the rivers of that area mostly flow to the north. Geological studies reveal that this area is relatively young. The ancient Stanovoy Highland existed in this

Card 1/2

The History of Relief Evolution in the South-Eastern Part of the Aldan Highland

area only during the second half of the Jurassic and Cretaceous periods. In the Mesozoic Era and during the Tertiary period, it was completely leveled off. Upper Tertiary and Lower Quaternary cycles of the tectonic genesis, which formed fault-block mountain ranges and depressions, hardly appear in this area of theAmur-Aldan water divide. The article mentions the following authors of geological treatises: A.N. Antropov, Yu.A. Bilibin, Yu.K. Dzevanovskiy, and Z.G. Ushakov. There is 1 map sketch and 5 Soviet references.

ASSOCIATION. Institut geografii AN SSSR (Institute of Geography AS USSR)

KORNILOV, B.A.

Traces of ancient glaciation in the southern part of the Timpton-Uchur interfluve. Trudy Inst.geog. 78:187-199 '59.
(MIRA 12:7)

(Timpton Valley--Drift) (Uchur Valley--Drift)

KORNILOV, B. A., Cand Geog Sci -- (diss) "Relief of the South-Eastern borderland of the Aldanskiy highlands." Moscow, 1960. 13 pp; (Moscow State Univ im M. V. Lomonosov); 180 copies; price not given; (KL, 22-60, 133)

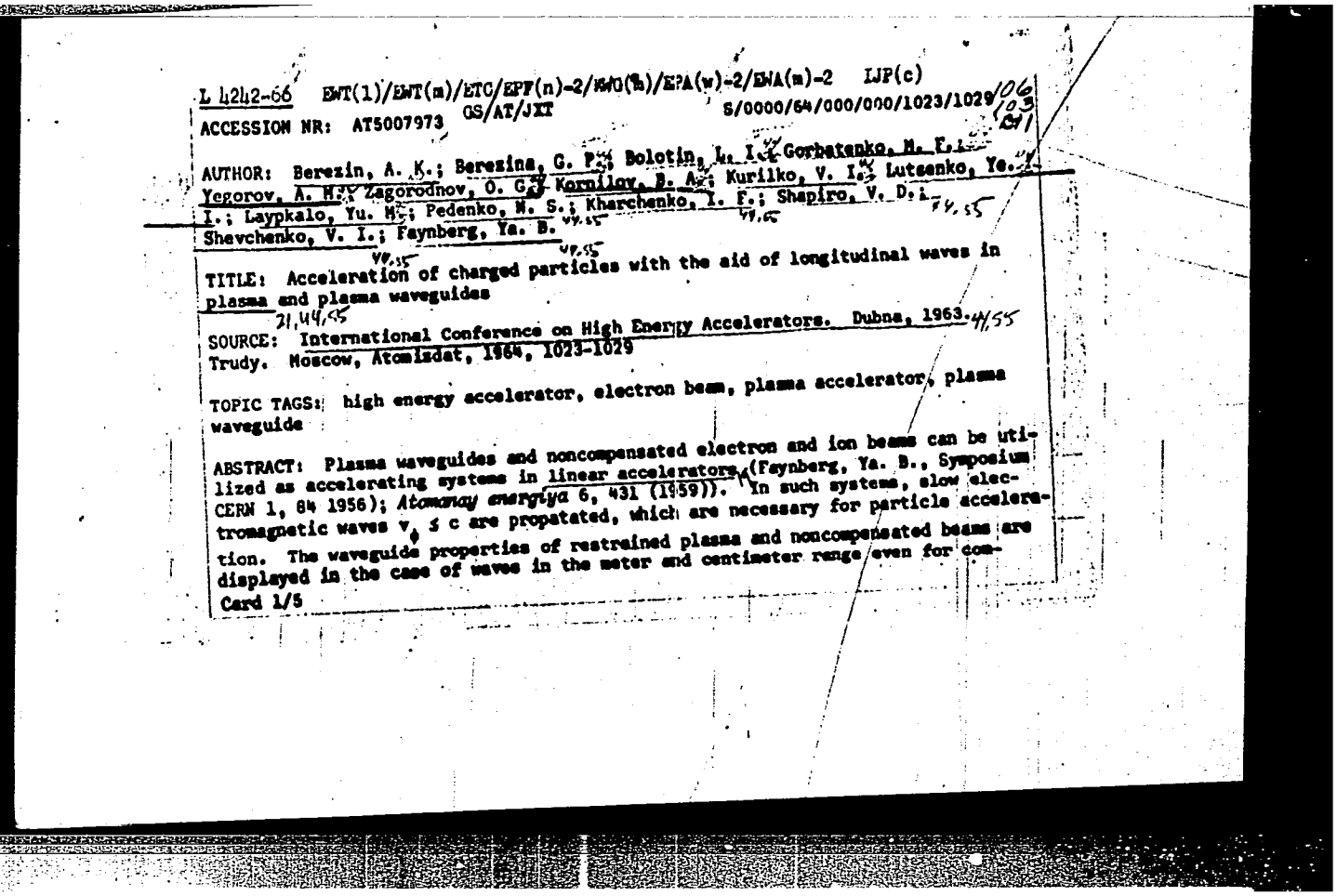
KORNILOV, Boris Aleksandrovich; DUMITRASHKO, N.V., doktor geogr. nauk, otv. red.; VOLYNSKAYA, V.S., red. izd-va; YEGOROVA, N.F., tekhn. red.

[Relief of the southeastern margin of the Aldan Plateau] Rel'ef iugo-vostochnoi okrainy Aldanskogo nagor'ia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 95 p. (MIRA 15:9)
(Aldan Plateau--Landforms)

KORNILOV, B.A.; IL'INA, L.P.; PAVLOVA, Ye.I.

Forecast of changes in natural conditions in connection with reservoir construction; using the example of the Volkhov Hydroelectric Power Station. Izv. AN SSSR. Ser. geog. no. 2: 50-59 Mr-Ap '64. (MIRA 17:5)

1. Institut geografii AN SSSR.



L 4242-66 EWT(1)/EWT(m)/ETC/EPF(n)-2/EWG(m)/EPA(w)-2/EWA(m)-2 IJP(c)
ACCESSION NR: AT5007973 GS/AT/JXT S/0000/64/000/000/1023/1029

AUTHOR: Berezin, A. K.; Berezina, G. P.; Bolotin, L. I.; Gorbatenko, M. F.; Yegorov, A. M.; Zagorodnov, O. G.; Kornilov, E. A.; Kurilko, V. I.; Lutsenko, Ye. I.; Laypkalo, Yu. M.; Pedenko, N. S.; Kharchenko, I. F.; Shapiro, V. D.; Shevchenko, V. I.; Faynberg, Ya. B.

TITLE: Acceleration of charged particles with the aid of longitudinal waves in plasma and plasma waveguides

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 1023-1029

TOPIC TAGS: high energy accelerator, electron beam, plasma accelerator, plasma waveguide

ABSTRACT: Plasma waveguides and noncompensated electron and ion beams can be utilized as accelerating systems in linear accelerators (Faynberg, Ya. B., Symposium CERN 1, 84 1956); *Atomnaya energiya* 6, 431 (1959)). In such systems, slow electromagnetic waves $v_\phi \leq c$ are propatated, which are necessary for particle acceleration. The waveguide properties of restrained plasma and noncompensated beams are displayed in the case of waves in the meter and centimeter range even for com-

Card 1/5

ACCESSION NR: AT5007973

paratively small plasma densities around 10^9 to 10^{13} cm^{-3}). Under these conditions the high-frequency energy losses during wave propagation, which are due to the collisions of plasma particles, are small. The density of electrons in metals (about 10^{23}) is many orders greater than is necessary for ensuring waveguide properties in the microwave range. This leads to great losses of high-frequency power during wave propagation in metallic conductors. For plasma densities around 10^9 to 10^{13} cm^{-3}, the energy losses during particle transist through the plasma, which are proportional to plasma density, are insignificant, from 10^{-5} to 10^{-6} ev/cm. This means that plasma waveguides are "transparent" for accelerated particles. According to the conditions of acceleration the particles are divided into individual bunches. Thus the loss of particles moving in the plasma can increase greatly because of the occurrence of coherent deceleration representing the inverse of the effect of coherent acceleration, which was established by V. I. Veksler (Symposium CERN 1, 80 (1956)). However, even for accelerated particle fluxes of the order of tens of amperes, these losses are all insignificant. Because waveguide properties are determined by the plasma, the metal surfaces can be remote from regions with large field strengths or eliminated altogether, which permits a significant increase in the permissible voltages of the accelerating fields and a substantial de-

L 4242-66
ACCESSION NR: AT5007973

crease in the high-frequency energy losses. It is also important to concentrate the electromagnetic energy in the radial direction only in the regions where the accelerated particles are moving. Thus for a given field strength the electromagnetic energy flux decreases markedly. If the fluxes of accelerated particles are large, the waveguide properties necessary for acceleration can be ensured by the particles of the beam which are not entrapped in the acceleration process, through which particles the entrapped particles move. The beam itself which is injected into the accelerator operates under these conditions of an accelerating system. To clarify the possibilities of particle acceleration by means of electromagnetic waves excited by charged particle beams, and also to investigate the influence of beam instabilities upon the acceleration process, the Physicotechnical Institute, Academy of Sciences Ukrainian SSR conducted theoretical and experimental investigations on the interaction of charged particle beams with a plasma. These investigations were intended to lead to, not the design and construction of a definite accelerator model, but the physical processes occurring during the interaction under consideration, and in this way to a determination of the possibilities of plasma methods of acceleration which are being developed at this institute. The theory developed up to the present time of the interaction between beams and plasma has been essentially a linear theory. As a result of the work of V. D. Shapiro and V.

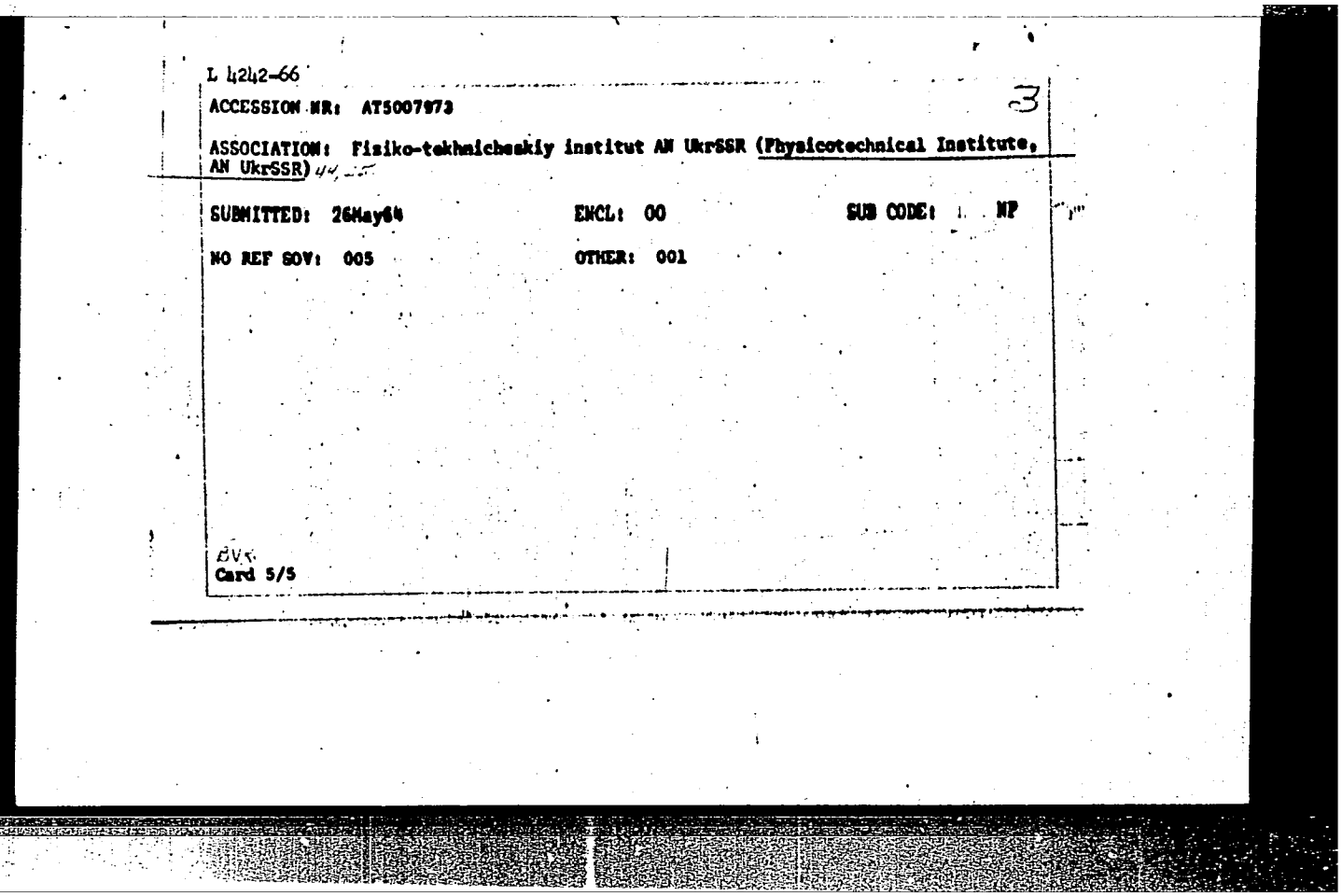
Card 3/5

L 4242-66

ACCESSION NR: AT5007973

I. Shevchenko at this institute for the case of beams of not very large density, a nonlinear theory has been created which permits one to trace the process of interaction of an initially nonmodulated beam and mono-energetic beam with a plasma from the initial stage to saturation. As is shown, a large part of the beam's energy of ordered motion (75% of its initial energy) is lost by the beam as a result of collective interactions with the plasma. Thus the energy expended upon excitation of oscillations amounts to 30%; upon increasing the thermal energy of the plasma, to 30%; and upon increasing the thermal energy of beam, to 15%. The experimental investigations of this interaction were carried out by I. F. Kharchenko and A. K. Berezin and their respective co-workers. Their results are in agreement with the theory of M. F. Gorbatenko. The mentioned institute has also carried out further theoretical and experimental investigations on the problems of electromagnetic wave propagation in plasma waveguides excited by high-frequency wall sources. The experimental studies, by O. G. Zagorodnov, et al., showed that the results agree well with theory under conditions of insignificant nonlinear effects. Current experiments are concerned with highly-ionized plasmas with density 10^{11} to 10^{12}. Orig. art. has: 4 figures, 1 table.

Card 4/5



L 4242-66

ACCESSION NR: AT5007973 3

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute, AN UkrSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP

NO REF SOV: 005 OTHER: 001

Card 5/5

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720005-3"

KORNILOV, B.A.; IKONNIKOV, B.P.

Comparative testing of grey pig iron modified by antimony and zinc-alluminum alloys. Izv. vys. ucheb. zav.; tekh. tekst. prom. no.6:139-142 '64. (MIRA 18:3)

1. Ivanovskiy energeticheskiy institut imeni Lenina.

LITVIN, I.S., inzh.; BLANK, I.I., inzh.; KORNILOV, B.B., inzh.; FINKEL'-SHTEYN, R.I., inzh.

Precast reinforced concrete standardized foundations for turbogenerators with 50 to 300 thousand kw. power ratings. Énerg. stroi. no. 32:7-15 '62. (MIRA 16:5)

1. Leningradskoye otdeleniye Vsesoyuznogo gosudarstvennogo proyektnogo instituta stroitel'stva elektrostantsiy.

USSR/Miscellaneous - Machine Tools

Card : 1/1

Authors : Kornilov, B. I.

Title : Modernization of the turret lathe for the centerless machining of long shafts

Periodical : Stan. i instr., 3, 28 - 29, Mar 1954

Abstract : Certain improvements in turret lathes to facilitate the machining of long shafts are described. These improvements helped increase production from 4 to 18 or 20 parts per shift. Diagrams are included.

Institution : ....

Submitted : ....

KORNILOV B.P.

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topochemistry, Catalysis. B-9

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 7250.

Author : B.P. Kornilov, A.G. Leybush.
Inst : State Scientific Research and Planning Institute of Nitrogen Industry.
Title : Nickel Oxidation and Reduction in the Process of Methane Conversion.

Orig Pub: Tr. Gos. n.-i. i proyekt. in-ta azot. prom-sti, 1956, vyp. 6, 65-80.

Abstract: It was established that only metallic Ni, but not its oxides, possesses a catalytic activity (CA) at the CH_4 conversion with steam or O_2 (or their mixture). A Ni-catalyst put on chamotte and promoted by difficultly reducible oxides (for example, Cr_2O_3) looses its CA at a protracted treatment with oxides (steam, air, pure O_2) at 600 to 1000°. The catalyst activity is restored in

Card : 1/2

KORNILOV, B. P. Cand Chem Sci -- (diss) "Catalytic conversion of methane."
Mos, 1957. 9 pp 22 cm. (Min of Higher Education USSR. Mos Order of Lenin [redacted]-
Chemicotechnological Inst im D. I. Mendeleyev), 100 copies (KL, 24-57, 116)

KORNILOV, B.P.; LEYBUSH, A.G., kand.khim.nauk

Investigating the upper limit of flammability of mixtures of methane and hydrogen with oxygen in the presence of inert diluents. Trudy GIAP no.7:5-20 '57. (MIRA 12:9)
(Methane) (Combustion) (Hydrogen)

L 40702-65 EPA/EPF(c)/EPR/EPA(s)-2/EWP(j)/EWA(c)/EWT(m) Pc-4/Pr-4/Ps-4/Pt-10
RM/WW/JW
ACCESSION NR: AP5010546 UR/0064/65/000/004/0001/0006

AUTHOR: Aleynova, L. N.; Aleynov, D. P.; Kazarnovskiy, Ya. S.; Kornilov, B. P. 52 B

TITLE: Intermediate stages of partial combustion of methane with oxygen

SOURCE: Khimicheskaya promyshlennost', no. 4, 1965, 1-6

TOPIC TAGS: methane, combustion, kinetics, pyrolysis, combustion mechanism, partial combustion, acetylene

ABSTRACT: Partial methane combustion by thermooxidative pyrolysis is the basic process in the production of synthesis gas or acetylene from natural gas. The kinetics of partial methane oxidation at lower temperatures have been studied extensively by Semenov and coworkers. However, the mechanism proposed in these studies holds only at temperatures below 1000C and cannot be applied to high-temperature processes. Experiments were made with oxygen and natural gas in a flow reactor to determine the concentration of intermediates and reaction products (CO_2, acetylene, ethylene, ethane, propane, O_2, CO, H_2) as a function of methane conversion. Runs were made at initial gas temperatures of 25C and 450C and pressures of 1 and 4 atm. The general trend in the accumulation of intermediates was identical in both experiments. The results indicate that partial oxidation at high temperatures takes place in three stages: 1) methane oxidation, during which oxygen is

Card 1/2

L 40702-65

ACCESSION NR: AP5010546

used for conversion to CO, H_2, H_2O, and CO_2 while the acetylene accumulation remains low (0—0.65 conversion); 2) acetylene accumulation, during which the CO_2, H_2O, and [illegible] remain constant (0.65—0.7 conversion), and 3) the last stage, characterized by conversion to CO and H_2, cracking of acetylene, and gasification of solid carbon (0.85—0.9 conversion). The thermal effect was also calculated, and a plot of the adiabatic flame temperature as a function of conversion was obtained. The maximum adiabatic temperature (about 1800C) at 0.63 conversion was found to exceed the equilibrium temperature by 480C. Orig. art. has: 5 figures. [PV]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: FP

NO REF SOV: 015 OTHER: 01 ATD PRESS: 3231

Card 2/2

ACC NR: AP6037011 (A, N) SOURCE CODE: UR/0181/66/008/011/3420/3422

AUTHOR: Kornilov, B. V.; Anfimov, A. V.

ORG: none

TITLE: Nonsinusoidal current oscillations in n-type silicon compensated with zinc

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3420-3422

TOPIC TAGS: silicon semiconductor, semiconductor band structure, impurity level, current oscillation

ABSTRACT: In analogy with the current oscillations observed in various semiconductors, the authors report observation of periodic oscillations in high resistivity n-type silicon (ρ = 40 ohm-cm), doped with phosphorus and compensated with zinc to produce a second acceptor level at 0.55 ev from the bottom of the conduction band. The sample was measured in a circuit containing a dc source and a resistance much smaller than that of the sample. Weak current oscillations, 5% of the stationary current, appeared at a field intensity on the order of several hundred volt per centimeter. At a field 3×10^3 v/cm, intense oscillations with a period of 3 sec appeared. These oscillations were not sinusoidal, the ratio of the maximum to minimum current being 2. With increasing field, the amplitude of the oscillations decreased and the large peaks disappeared. The frequency on the character of the oscillations did not change when the external resistance, capacitance, and inductances in the circuit were varied. The slow period of the oscillations (~3 sec) can-

ACC NR: AP6037011

not be attributed to the reactive elements in this circuit. Similar oscillations were observed in individual samples in which the zinc and phosphorus concentrations were doubled, except that the critical field was 5×10^3 v/cm and the oscillation period increased to 10 sec. The main difference between the observed oscillations and those reported earlier is that they began at different polarities of the applied voltage and are five orders of magnitude lower in frequency. In the authors' opinion the oscillations are connected with domain instability. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 03Jun66/ ORIG REF: 007/ OTH REF: 004

Card 2/2

L 21155-66 EWT(l)/EWT(m)/EWP(t) IJP(c) AT/JD
ACC NR: AP6003787 SOURCE CODE: UR/0181/66/008/001/0201/0207

AUTHOR: Kornilov, B. V.

ORG: none

TITLE: Recombination of carriers on zinc atoms in p-type silicon

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 201-207

TOPIC TAGS: silicon semiconductor, electron recombination, semiconductor carrier, zinc, ir spectrum, ir absorption, capture cross section

ABSTRACT: In view of the lack of data on the recombination properties of silicon doped with impurities having deep levels, and in view of the fact that earlier investigations by others were limited to the case of stationary photoconductivity and to an improperly separated region of the infrared spectrum, the author investigated the behavior of the relaxation constant in zinc-doped p-type silicon crystals in the temperature range 80 -- 250K, the recombination properties of the zinc-doped silicon, and the nonstationary impurity photoconductivity.

Card 1/2

L 21155-66
ACC NR: AP6003787

The investigations covered not only crystals obtained by the diffusion annealing method, but also crystals obtained by doping the zinc in the melt. The measurements were carried out by a method described by the author earlier (FTT v. 7, 1795, 1965). The hole lifetime was measured under conditions of unipolar excitation, using a monochromator with narrow slits and interference filters to cut out the fundamental absorption frequencies. The lifetime exhibited a logarithmic decrease with increasing electron density and a linear decrease with increasing number of free places at the zinc level (0.31 ev). The cross sections for the capture of the carriers at this level, measured by a procedure described earlier (FTT v. 4, 2416, 1962), for zinc drawn from the melt as well as for zinc obtained by diffusion annealing, are found to be 10^{-14} cm^2 for electrons and 5×10^{-16} cm^2 for holes. These cross sections are practically independent of the temperature in the temperature interval 80 -- 200K. The author thanks S. G. Kalashnikov for a discussion of the obtained data. Orig. art. has: 5 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: 17Aug64 ORIG REF: 007/ OTH REF: 003

Card 2/2 PB

L 9D/4-DD EWI(1)/EWI(m)/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/AT
ACC NR: AP5027448 SOURCE CODE: UR/0181/65/007/011/3458/3460

AUTHOR: Kornilov, B. V.

ORG: none

TITLE: Using double injection to determine the effective cross section for capture of a hole by a zinc atom with a negative charge of one in *p*-silicon

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3458-3460

TOPIC TAGS: silicon semiconductor, semiconductor theory, zinc, capture cross section

ABSTRACT: A *p*-type semiconductor with a partially compensated deep acceptor level is considered. The semiconductor is equipped with two injecting contacts. The processes which take place in such a p^+-pn^+ structure may be described by the following equation

$$I = eE(\mu_p p + \mu_n n); \quad (1)$$

$$\frac{\varepsilon}{e}\frac{dE}{dx} = \delta p_k + p - p_0 - n, \quad (2)$$

where $\delta p_k = p_k - p_{k0}$;

$$-\frac{1}{e}\frac{dI_p}{dx} = \frac{1}{e}\frac{dI_n}{dx} = \frac{n}{\tau_n} = \frac{p}{\tau_p}, \quad (3)$$

$$\left.\begin{aligned} \tau_n &= \frac{1}{p_k V_n S_n}, \quad \tau_p = \frac{1}{n_k V_p S_p}, \\ n_k + p_k &= N_k. \end{aligned}\right\} \quad (4)$$

Card 1/3

The diffusion component is disregarded in current equation (1). It is assumed that the field at both electrodes is equal to zero. The author examines the special case where

$$\frac{\tau_p}{\tau_n}\frac{n}{p} \gg 1.$$

Here I is the total current through the semiconductor; p and n are free carrier concentrations; μ_n and μ_p are the mobilities of electrons and holes; ε is the dielectric constant; x is a variable coordinate; n_k and p_k are electron and hole concentrations at recombination centers; n_{k0} and p_{k0} are the equilibrium concentrations of holes and electrons at recombination centers; N_k is the concentration of recombination centers; I_p and I_n are the hole and electron components of the currents; S_p and S_n are the cross sections for capture of holes and electrons by the deep level. A solution of equations (1)-(4) gives the following expression for the capture cross section of a hole

$$S_p = \frac{U^2 N_k^2 \mu_p^2}{4\pi L^4 n_{k0}^2 v_e p_{k0}}.$$

This expression was used for evaluating the effective cross section of hole capture by a singly charged negative zinc atom. Zinc-doped p-silicon was used as a basis for

ACC NR: AP5027448

preparing a p^+-pn^+ specimen. A value of approximately $3 \cdot 10^{-14}$ cm^2 was found for S_p^-. In conclusion, I thank I. I. Kvyatkevich for discussion of the theory, and V. V. Kalichuk for assistance in preparation of the specimens. Orig. art. has: 1 figure, 6 formulas.

SUB CODE: 20/ SUBM DATE: 14Jun65/ ORIG REF: 003/ OTH REF: 004

Card 3/3

L 9290-66 EWT(1)/T/EWA(h) IJP(c)

ACC NR: AP5026911 SOURCE CODE: UR/0109/65/010/010/1909/1910

AUTHOR: Artem'yev, N. L.; Kornilov, B. V.

ORG: none

TITLE: Infracon, a new camera tube

SOURCE: Radiotekhnika i elektronika, v. 10, no. 10, 1965, 1909-1910

TOPIC TAGS: camera tube, IR camera, detection equipment, black body radiation, semiconductor single crystal

ABSTRACT: A new camera tube (infracon) with a cooled phototarget is designed for operation in the 0.65—4-μ region. A single-crystal semiconductor material is used as the phototarget, operating on the principle of accumulation. TV images of objects heated to 125C and higher were obtained by the new tube. The threshold irradiated power at this temperature was roughly 0.1 μw/mm^2. The relationship between the signal and the temperature of the radiation sources (black bodies)

Card 1/2 UDC: 621.385.832.5

L 9290-66

ACC NR: AP5026911

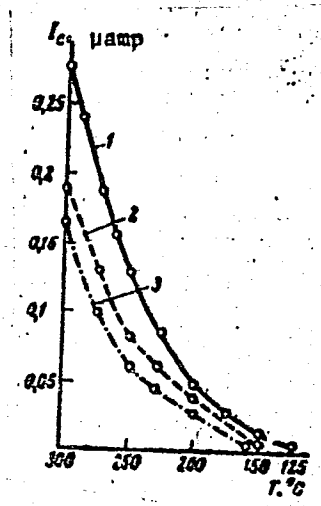


Fig. 1. Dependence of the video signal on the temperature of the radiation source

1 - Signal without a filter; 2 - signal obtained with a silicon phototarget; 3 - signal obtained with a germanium phototarget.

in such a tube is shown in the figure. Orig. art. has: 1 figure. [JR]

SUB CODE: 17 / SUBM DATE: 22Jan65/ OTH REF: 001/ ATD PRESS: 4153

Card 2/2

S/181/62/004/009/014/045
B108/B186

AUTHOR: Kornilov, B. V.

TITLE: Determination of the effective capture cross section for majority carriers by copper and germanium atoms on the basis of unsteady impurity photoconductivity

PERIODICAL: Fizika tverdogo tela, v. 4, no. 9, 1962, 2416 - 2418

TEXT: An arrangement consisting essentially of current source, specimen and variable load resistance was used to study the impurity photoconductivity of n and p-type Ge irradiated with modulated light $Ie^{i\omega t}$. After the potential for two given frequencies $\omega\tau \geqslant 1$ had been measured, the relaxation time τ was determined from the formula

$$\Delta V = V_{0e}\beta_k I_k n_{k0}\tau \exp(i(\omega t+\pi - \tan^{-1}\omega\tau)/n_o\sqrt{1+\omega^2\tau^2}$$

V_{0e} is the background potential drop along the illuminated section of the specimen, β_k is the cross section of photon absorption, n_o is the steady

Card 1/2

S/181/62/004/009/014/045
B108/B186

Determination of the effective...

concentration of the conduction electrons, p_{k0} and $n_{k0} = N_k - p_{k0}$ are the steady concentrations of the vacant and completed levels. The capture cross sections were obtained from the above-mentioned formula and from the relation $\tau = 1/S_n u(p_{k0} + n_o + p_{k0}n_o/n_{k0})$. At 85°K, the electron capture cross section on the third level of copper is found to be $S_n = 6\cdot10^{-20}$ cm^2 and the hole capture cross section on the second level of copper $S_p = 10^{-17}$ cm^2, which values agree with published data (Yu. A. Kontsevoy, M. I. Iglitsyn. FTT, 2, 1149, 1960). There are 2 figures.

SUBMITTED: April 11, 1962

Card 2/2

ACCESSION NR: AP4000155 S/0181/63/005/011/3305/3311

AUTHOR: Kornilov, B. V.

TITLE: Absorption in zinc-doped silicon

SOURCE: Fizika tverdogo tela, v. 5, no. 11, 1963, 3305-3311

TOPIC TAGS: silicon, silicon absorption, zinc doped silicon, impurity absorption, photon absorption, p type silicon, n type silicon

ABSTRACT: Optical absorption spectra in the frequency range of 5—10 μ have been studied in zinc-doped samples of p- and n-type silicon at temperatures of 90 and 290K. The measurements established the existence in p-type silicon of two zinc accepter levels, one at 0.33 ev from the edge of the valence band, the other one at 0.55 ev from the edge of the conduction band. In n-type silicon the zinc accepter level was found at 0.55 ev from the edge of the conduction band. The cross sections of photon capture by zinc atoms are found in neutral, singly negative, and doubly negative states. The

Card 1/2

ACCESSION NR: AP4000155

cross section of photon capture by neutral centers σ_p^0 equals 2×10^{-16} cm^2; by singly negative centers σ_n^- it equals 3×10^{-15} cm^2; by doubly negative centers $\sigma_n^=$ it equals 10^{-15} cm^2; and by singly negative σ_p^- zinc atoms it equals 2×10^{-15} cm^2. The author thanks S. G. Kalashnikov, Dr. of Physico-mathematical Sciences, for his valuable comments on the results of the study and for his constant interest in the work. Orig. art. has: 5 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 03Jul63 DATE ACQ: 02Dec63 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 005

Card 2/2

KORNILOV, B.V.

Selective inertness of a p-n junction at deep-seated zinc levels in silicon. Fiz. tver. tela 5 no.11:3331-3332 N '63. (MIRA 16:12)

ACCESSION NR: AP4011787 S/0181/64/006/001/0331/0333

AUTHOR: Kornilov, B. V.

TITLE: Effect of impact ionization of zinc at a low level in p type silicon

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 331-333

TOPIC TAGS: impact ionization, ionization, zinc, germanium, p type silicon, low level ionization, Ohm's Law, Hall effect, photoconductivity, heat diffusion, phosphor, acceptor, first acceptor level, silicon, aluminum, absorption

ABSTRACT: The author has undertaken this study because of the great theoretical and practical importance of breakdown at the low level of Zn in p-type Si. He has injected Zn in concentrations of about $3 \cdot 10^{15}$ cm^{-3} by heat diffusion into initially n-type Si containing phosphor in concentrations of $7 \cdot 10^{14}$ cm^{-3}. The existence of the low level of Zn was determined by the Hall effect, the spectral distribution of the photoconductivity, and absorption. The energy of the level, as obtained from three independent determinations, was 0.33 ± 0.02 ev. Al was fused to the p-type plate to give a p^+pp^+ structure. The thickness of the p zone was approximately

Card 1/2

ACCESSION NR: AP4011787

30 microns. The volt-ampere characteristics for this structure are shown in Fig. 1 on the Enclosure (obtained at 77K). Change in voltage greatly increases the current (by as much as a factor of a billion). The critical field value (the voltage at which the current jumps sharply) is 20 000 v/cm, which is very similar to the critical for gold-doped Si. The author concludes that the results he obtained are associated with impact ionization of the first acceptor level of Zn in Si. At room temperature this effect is not noted. The relation of current to voltage follows Ohm's Law. "I express my sincere thanks to Professor S. G. Kalashnikov for discussions of the data." Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 11Sep63 DATE ACQ: 14Feb64 ENCL: 01

SUB CODE: PH NO REF SOV: 001 OTHER: 006

Card 2/2

ARTEM'YEV, N.L.; KORNILOV, B.V.

Infracon, a new television transmitting tube. Radiotekh. i elektron. 10 no.10:1909-1910 O '65. (MIRA 18:10)

L 29989-65 EWT(m)/T/EWP(t)/EWP(b) IJP(c)/AEDC(a)/SSD/SSD(c)/AFWL/AS(mp)-2/ESD(ge)/
ACCESSION NR: AP5000683 ESD(t) JD S/0181/64/006/012/3721/3723

AUTHOR: Kornilov, B. V.

TITLE: Optical charge exchange between impurity zinc atoms in silicon

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3721-3723

TOPIC TAGS: silicon, charge exchange, valence band, photoconductivity, recombination, capture cross section

ABSTRACT: N-type silicon crystals, doped with zinc by the diffusion-annealing [illegible], were investigated at T = 80K. The concentrations of zinc (N_{Zn}) and [illegible] (N_p) satisfied the inequality $N_{Zn} \leq N_p < 2N_{Zn}$, i.e., the lower level of [illegible] eV above the valence band) was [illegible] and the upper level [illegible] the valence band), part[illegible] illumination with light of [illegible] eV produced charge exchange by pumping [illegible] from the 0.11 eV to the [illegible] level. Subsequent illumination with [illegible] wavelength corresponding to the (1-1) transition from [illegible] level to the conduction [illegible] produced a photoconductivity "flash, [illegible] was proportional to

L 29989-65
ACCESSION NR: AP5000683

the density of electrons at the 0.55 eV level. This density and the flash amplitude increased with the duration and intensity of the preliminary illumination until a steady state was established when the probabilities of excitation to the conduction band and of recombination became equal for each level separately. The value of the capture cross section for the upper level was estimated from the number of carriers at that level: it was $\leq 10^{-18}$ cm^2, two orders of magnitude greater than that reported by K. D. Glinchuk and N. M. Litovchenko (FTT, v. 5, 1933, 1963). "The author thanks Professor S. G. Kalashnikov for discussing the results." Orig. art. has: 2 figures and 4 formulas.

ASSOCIATION: None

SUBMITTED: 08Jul64 ENCL: 00

SUB CODE: IC, SS NR REF SOV: 005 OTHER: 000

Card 2/2

L 22211-65 EWT(m)/EWP(b)/EWP(t) SSD/AFWL/ASDA-5/ESDG(s)/ESDT IJP(c) JD

ACCESSION NR: AP5003473 S/0181/65/007/001/0329/0330

AUTHOR: Kornilov, B. V.

TITLE: Generation phenomenon in an n-type germanium plate with admixture of copper

SOURCE: Fizika tverdogo tela, v. 7, no. 1, 1965, 329-330

TOPIC TAGS: electromagnetic oscillation, low frequency oscillation electrooptical effect, germanium, germanium semiconductor

ABSTRACT: The author reports on the phenomenon of excitation of 2—5 kc stable electromagnetic oscillations in a germanium plate illuminated by light with a wavelength of 1.5—4.8 μ by the application of a steady field of the order of 100 v/cm. N-type germanium doped with antimony and with a partially compensated upper copper level was investigated at 85 K. Without illumination, the oscillation effect occurred above 100 v/cm while illumination brought the necessary field intensity as low as 60 v/cm. The current values at which

Card 1/2

L 22211-65
ACCESSION NR: AP5003473

oscillations started and ceased depend on the wavelength of the illuminating light: for the 3.6 μ wavelength, for instance, current values were 4.5 μamp and 10 μamp, respectively. The variation of the circuit parameters during the experiment failed to have any effect on the generation, which leads to the conclusion that the oscillation phenomenon was entirely due to the semiconductor plate. The nature of that mechanism remains unknown. Orig. art. has: 2 figures. [FP]

ASSOCIATION: none

SUBMITTED: 03Jul64 ENCL: 00 SUB CODE: SS, EM

NO REF SOV: 005 OTHER: 002 ATD PRESS: 3169

Card 2/2

L 2351-66 EWI(l)/EWI(m)/EWP(t)/EWP(b) IJP(c) JD/GG

ACCESSION NR: AP5014583 UR/0181/65/007/006/1795/1799

AUTHOR: Kornilov, B. V.

TITLE: Recombination of carriers on zinc atoms in n-type silicon

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1795-1799

TOPIC TAGS: semiconductor carrier, silicon, electron recombination

ABSTRACT: The author investigated stationary and nonstationary impurity photoconductivity in n-type silicon doped with zinc. The investigation consisted of determining the characteristic times of the majority carriers in the temperature range 80 — 300K. The preparation of the samples was described by the author earlier (FTT v. 5, 3005, 1963). The photoconductivity relaxation constant was determined from the frequency dependence of the photoconductivity signal. Plots are presented of the temperature dependence of the relaxation constant and of the dependence of ln(U/i) on the number of incident quanta (U—voltage applied to sample, i—current through sample.

Card 1/2

L 2351-66

ACCESSION NR: AP5014583

The cross section for the capture of an electron by an atom of zinc with single negative change is found to range between 10^{-20} and 10^{-18} cm^2, and to be practically independent of the temperature in the 100—300K range. The effect of the method used to introduce the impurities in the silicon is discussed, and the results are compared with those obtained by others. "I thank S. G. Kalashnikov for a discussion of the results." Orig. art. has: 5 figures and 4 formulas.

ASSOCIATION: None

SUBMITTED: 17Aug64 ENCL: 00 SUB CODE: SS

NR REF SOV: 006 OTHER: 000

Card 2/2

KORNILOV, B. YE.

Kornilov, B. Y e. "Methods of determining the freshness of certain food sub-products." Moscow Veterinary Academy, Min Higher Education USSR. Chair of Veterinary Sanitary Expertise. Moscoq, 1956. (Dissertation for the Degree of Candidate in Veterinary Science)

So: Knizhnaya letopis', No. 27, 1956. Moscow. Pages 94-109: 111.

KORNILOV, D., kand. sel'skokhozyaystvennykh nauk.

Forage plants for the green fodder plan in Yakutia. Nauka i pered. op. v sel'khoz. 8 no.5:56-57 My '58. (MIRA 11:5)
(Yakutia--Forage plants)

KORNILOV, D.M.; BLANKA, G.Ya., red.; ZHILOVA, I.I., red.; NOTKINA, V.Ye., red.; MARTSEVICH, Yu., red.izd-va.

[The economics and planning of Soviet cooperative trade]Ekonomika i planirovanie sovetskoi kooperativnoi torgovli; al'bom nagliadnykh posobii. Moskva, Izd-vo TSentrosoiuza, 1961. 1 p. 82 l. (MIRA 16:1)

(Cooperative societies--Audio-visual aids)

KORNILOV, E.

Improve the scavenging system of the KVG-34 boilers. Mor. flot 25 no.2:32-33 F '65. (MIRA 18:4)

1. Tretiy mekhanik teplokhoda "Bukharest".

SHPAK, L.L., inzh.; KORNILOV, F.A.

Universal electromagnetic locator. Svar. proizv. no.7:40 Jl '65.
(MIRA 18:8)

1. Trest "Donorgtekhstroy".

MATVEYEV, A.V.; SMIRNOV, V.A.; VAVILIN, L.N.; YEVDOKIMOV, Yu.D.; KORNILOV, F.M.

Experience in using the method of reducing local aerogamma anomalies to the level of the earth's surface for aeroradiometric prospecting. Vop. rud. geofiz. no.5:76-87 '65.

(MIRA 18:9)

YABLONSKIY, V.S., KORNILOV, G.G., FROLOV, K.D., NECHVAL', M.V.

Effect of the profile of pipeline routes and specific gravity differences of petroleum products on their mixing in consecutive pumping. Neft. khoz. 38 no.6:55-61 Je '60.
(Petroleum--Transportation)

KORNILOV, G.G.; SVIRIDOVA, A.S.; YABLONSKIY, V.S. [deceased]

Estimating the head losses in the motion of gas-liquid mixtures. Trudy NIITransneft' no.3:35-41 '64.

Experimental investigation of the motion of gas-liquid mixtures through pipelines. Ibid.:42-57

(MIRA 18:2)

YABLONSKIY, V.S.; KORNILOV, G.G.; FROLOV, K.D.; NECHVAL', M.V.

Factors influencing the mixing of petroleum and petroleum products in consecutive pumping. Trudy NIITransneft' no.1:118-132 '61. (MIRA 16:5)

(Petroleum pipelines—Fluid dynamics)

YABLONSKIY, V.S.; KORNILOV, G.G.; FROLOV, K.D.; NECHVAL', M.V.

Mixing of fluids during stoppages in consecutive pumping. Trudy NIITransneft' no.1:133-145 '61. (MIRA 16:5)
(Petroleum pipelines--Fluid dynamics)

KORNILOV, G.G.; CHERNIKIN, V.I.

Hydraulic calculation of pipeline for gas-liquid mixtures. Neft. khoz. 42 no.8:51-55 Ag '64. (MIRA 17:9)

KORNILOV, Georgiy Ivanovich; POPOV, A.S., redaktor; RAKOV, S.I., tekhnicheskiy redaktor

[Our gardens and orchards] Nashi sady i ogorody. [Moskva] Izd-vo VTeSPS Profizdat, 1956. 53 p. (MIRA 10:1)

1. Predsedatel' komissii po sadovodstvu i ogorodnichestvu zavkoma Yaroslavskogo shinnogo zavoda (for Kornilov)
(Gardening)

KORNILOV, G.I.

Concerning V.I. Bocharov's article "Load distribution in a coal mine according to the degree of importance of the operations." Prom. energ. 17 no.11:59-60 N '62. (MIRA 15:12)

1. Krivorozhskiy gornorudnyy institut.
(Electricity in mining)
(Bocharov, V.I.)

KORNILOV, G.I.

PHASE I BOOK EXPLOITATION SOV/4383

Akademiya nauk URSR. Instytut mashynoznavstva ta avtomatyky

Temperaturni napruzhennya v tonkostinnykh konstruktsiyakh (Thermal Stresses in Thin-Walled Structures) Kyyiv, 1959. 175 p. Errata slip inserted. 1,000 copies printed.

Resp. Ed.: M. Ya. Leonov, Doctor of Physics and Mathematics, Professor; Ed. of Publishing House: N. M. Labinova; Tech. Ed.: T. Ya. Mazuryk.

PURPOSE: This collection of articles is intended for technical personnel in the machine industry.

COVERAGE: These articles deal mainly with analyses of temperature fields and thermal stresses in shells and plates. Experimental methods of investigation of the state of stress in machine parts under nonuniformly distributed temperatures are described. No personalities are mentioned. References accompany each article.

Card 1/5

Thermal Stresses in Thin-Walled Structures SOV/4383

TABLE OF CONTENTS:

Card 2/5

the state of stress in a strip caused by local heating of one of the edges.

AVAILABLE: Library of Congress (TA492.C9A5)

VK/pw/mas
10-24-60

42176
S/813/62/000/001/002/008
E193/E383

10.8160

AUTHORS: Kornilov, G.I. and Yarema, S.Ya.

TITLE: Flat test pieces with crack-like stress concentrators for experimental study of plasticity bands

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut mashynozavstva i avtomatyky, L'viv. Voprosy mekhaniki real'nogo tverdogo tela. no. 1. Kiev, 1962, 29-36

TEXT: The object of the present investigation was to study the initial, highly localized stage of plastic deformation. The better to observe the formation of the first slip bands and subsequent spreading of the zone of plastic deformation, flat test pieces with stress risers were used. The test pieces were 350 mm long and 200 mm wide, their thickness ranging from 0.7 to 2.5 mm. The stress risers were in the form of a very narrow (not more than several hundredths of a mm wide) slit, cut (by a method whose detailed description is given) in the centre of the test piece symmetrically and at a right angle to its longer axis which was also the axis of loading. The length of the slits, which terminated at each end in a narrow wedge-like hair crack, ranged

Card 1/3

Flat test pieces ....

from 8 - 25 mm. Test pieces of various steels with yield points ranging from 18 - 32 kg/mm^2 were studied; before each test they were normalized and polished by the usual metallographic techniques. The formation of slip bands was observed directly after the tensile tests. To facilitate comparison of the results obtained on various types of steels, the state of stress was described by a dimensionless parameter $\varkappa = \sigma_H/\sigma_T$, where σ_H is the nominal stress in the plane of the stress riser and σ_T is the yield point of the alloy tested. The results of visual examination only are reported in the present paper. The general conclusion reached was that the process of plastic deformation under the conditions employed consisted of several stages: 1) the incubation period (without visible indication of plastic deformation) extending in the range of $\varkappa < 0.45$; 2) nucleation and growth of horizontal slip bands starting at the ends of the stress riser; this process takes place at $\varkappa \geq 0.45 \leq 0.85$; 3) appearance of another system of slip bands starting at the ends of the stress riser and inclined to the horizontal at 50 - 55° ; both the horizontal and inclined slip bands grow

Flat test pieces S/813/62/000/001/002/008
E193/E383

during this stage, reaching ultimately the edges of the test piece; 4) appearance of a large number of both horizontal and oblique slip bands which broaden and coalesce to form zones of plastic deformation at almost constant load ($\varkappa$ > 0.9); 5) growth of cracks and loss of transverse stability of the test piece at a decreasing load, followed by fracture. There are 10 figures.

SUBMITTED: June 1, 1961

Card 3/3

KO[illegible], YAREMA, S.Ya.

Plane specimens with cracklike concentrators for the experimental study of plasticity bands. Vop. mekh. real'. tver. tela no.1: 29-36 '62. (MIRA 16:1)
(Elastic plates and shells) (Deformations (Mechanics))

FAYNSHTEYN, E.G.; MASLOV, V.P.; KORNILOV, G.I.

Remote control of surface substations at the S.M. Kirov Mine. Sbor. nauch. trud. KGRI no.19:30-35 '62. (MIRA 16:5)

(Krivoy Rog Basin--Electric substations) (Remote control)

FAYNSHTEYN, E.G.; KORNILOV, G.L.; MASLOV, V.P.

Apparatus for remote control of block-type fans in the S. M. Kirov Mine. Sbor. nauch. trud. KGRI no.19:35-38 '62. (MIRA 16:5)

(Krivoy Rog Basin--Fans, Electric) (Remote control)

FAYNSHTEYN, E. G., kand. tekhn. nauk; KORNILOV, G. I., inzh.

Simple TUBV device for remote control of block-type fans in mines. Izv. vys. ucheb. zav.; gor. zhur. 5 no.8:150-154 '62. (MIRA 15:10)

1. Krivorozhskiy gornorudnyy institut. Rekomendovana kafedroy osnov elektrotekhniki i elektricheskikh mashin.

(Mine ventilation—Equipment and supplies)
(Remote control)

SOV/122-59-5-4/32

AUTHOR: Kornilov, G.I., Engineer

TITLE: The Effect of the Viscosity and Quantity of Lubricating Oil on the Power Losses in a Worm Reducing Gear (Vliyaniye vyazkosti i kolichestva smazochnogo masla na poteri moshchnosti v chervyachnom reduktore)

PERIODICAL: Vestnik mashinostroyeniya, 1959, Nr 5, pp 19-21 (USSR)

ABSTRACT: Tests are reported, carried out at the Machine Component Laboratory of the Institute of Mechanical Engineering and Automatic Control of the Academy of Sciences of the UkrSSR (Laboratoriya detaley mashin Instituta mashinovedeniya i avtomatiki AN USSR) to determine the power losses in a worm gear transmission. A self-lubricating worm gear, rated 1.5 hp, with an underslung worm was tested having a ratio of 1:32. A single start steel worm of 5 mm module drives a bronze wheel. The losses are plotted against rpm at different temperatures and for different oils. Some accepted formulae for the power loss are verified. It is concluded that, for low power loss, it is advisable at temperatures of 40 - 60°C to work with

Card 1/2

The Effect of the Viscosity and Quantity of Lubricating Oil on the Power Losses in a Worm Reducing Gear

low viscosity oils. At a higher temperature, oils with greater viscosity, including castor oil, are recommended. The effect of oil quantity is moderate. Worm transmissions run at 80-100°C with oils of 10-20° Engler are admissible. There are 2 figures and 5 Soviet references.

S/122/60/000/012/006/018
A161/A130

AUTHORS: Kornilov, G. I., Engineer; Tynnyy, A. N., Candidate of Technical Sciences

TITLE: Wear resistance of titanium-copper cast iron worm gears

PERIODICAL: Vestnik mashinostroyeniya, no. 12, 1960, 26 - 29

TEXT: The purpose of described experiments was testing Ti-Co cast iron worm gears as possible replacement for the costly tin bronze gears. Special grey cast iron grades are already being used for light-load slow transmission gears, as well as alloy cast irons including Ti-Co cast iron, but no data are available on its wear resistance. The tested 1.5 hp reducers had 25.5 (St.5) steel worm and Ti-Co cast iron worm gear. The chemical composition of this cast iron is: (%) 3.4 C, 2.3 Si, 0.63 Mn, 0.45 Cr, 0.4 Ni, 0.2 P, 0.12 S, 0.4 Ti, 0.25 Cu. A special test rig was used, with a special electric motor producing load. It was stated that sulfurization raised the wear resistance, and the best results were obtained when both the worm and wheel were sulfurized in bath 2/6 of NIIKhIMMASh; bath no. 2 of the Minsk Automobile Plant had a less good effect. The comparative wear of the worm gears per hour at 1,210 and 1,750 kg/cm^2 contact pressure was 0.01 and

Card 1/2

S/122/60/000/012/006/018
A161/A130

Wear resistance of titanium-copper cast iron worm gears

0.014 mm on non-sulfurized gears, 0.003 and 0.006 mm on gears sulfurized in bath no. 2 of MAZ, and 0.0017 and 0.0025 mm on gears treated in bath 2/6 of NIIKhIMMASh and working in couple with also sulfurized worm. The tests lasted 70 h. The wear rate increased after 100 h running in such conditions. Sulfurization obviously reduced friction, prevented jamming in contact, and made the work surfaces smooth after running-in. The conclusion was made that worm gears of Ti-Cu cast iron can bear 25 - 30% higher contact load than worm gears of CY 15-32 (SCh 15-32) and CY 18-36 (SCh 18-36) grey cast iron at equal sliding velocity. There are 3 figures, 1 table and 1 Soviet-bloc reference.

Card 2/2

S/123/62/000/018/006/012
A006/A101

AUTHOR: Kornilov, G. I.

TITLE: The temperature in the contact zone of a worm pair

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye; no. 18, 1962, 40 - 41, abstract 18A237 ("Nauchn. zap. In-ta mashinoved. i avtomatiki AN UkrSSR, Ser. mashinoved." 1961, 8, 166 - 169)

TEXT: The author describes the methods and results of experimentally determining the surface-adjacent layer temperature (up to 0.5 mm) in the contact zone of a worm during the operation of the reducer. The investigations were carried out on an industrial-type self-greasing worm reducer with lower arrangement of the worm. The experiments have shown that in the case of a steel-bronze worm pair, the temperature in the surface-adjacent layer of the contact zone exceeds the temperature of the greasing oil by not over 15% if the contact gear stress δ_c = 1750 - 2000 kg/cm^2, the slip rate is up to 4 m/sec, and continuous liquid greasing is performed. A slight increase in the temperature of the surface-adjacent layer of the contact zone metal over the greasing-oil temperature is explained by the intensive heat exchange between the high-speed rotating worm and

Card 1/2

S/123/62/000/018/006/012
A006/A101

The temperature in the contact zone of a worm pair

the greasing oil. If the continuous process of greasing is interrupted (dry friction), the temperature in the contact zone rises sharply. This increase was 40 - 70°C per hour for the investigated reducer during the first hours of its operation without grease. The consequence of such a high temperature increase in dry friction may be galling of the operational surfaces, increased wear, and rapid failure of the drive. The temperature of the contact zone was experimentally measured and was found to be in agreement with calculated values obtained by A. I. Pestov's method. When liquid grease was used and depending on the load, the measured temperature was only 7 - 10% below the calculated value for the investigated reducer.

[Abstracter's note: Complete translation]

Card 2/2

KORNILOV, G.I.

Curves of heating and cooling for worm reducing gears. Nauch. zap.IMA AN URSR.Ser.mashinoved. 9:123-125 '62. (MIRA 15:12)
(Gearing, Worm)

S/122/63/000/002/003/012
D262/D308

AUTHOR: Kornilov, G. I., Engineer

TITLE: Investigation of heat exchange in worm gearing

PERIODICAL: Vestnik mashinostroyeniya, no. 2, 1963, 19-23

TEXT: An attempt is made to establish the causes affecting the changes in coefficients of heat exchange for self-lubricating reductors. Coefficients of heat exchange inside the body (α_1), and between the external surface of the body and the surroundings (α_2) are calculated by comparing the quantities of heat a) produced in the reductor, b) generated by the inside surface of the body, and c) dissipated by the external surface of the body into surroundings. Conclusions: uniformity of temperature distribution in the body of the reductor, with natural cooling, depends on the properties of the lubricant viscosity (speed of circulation), and on the design of the reductor. Heat transfer inside the body is mainly by convection and quantities of heat exchanged by convection are by 5 to

Card 1/2

KORNILOV, [illegible] Iosh. (Krivoy Rog)

Economic expediency of the reservation of the electric power supply networks of industrial enterprises. Elektrichestvo no.1: 29-32 Ja '65. (MIRA 18:7)

KORNILOV, G.I.

Author's reply. Elektrichestvo no.11:84-85 N '65. (MIRA 18:11)

PAYEVSKIY, S.A.; KORNILOV, G.N.

Incidence of diphtheria amoung children in Chita in 1958-1960. Zhur.mikrobiol.epid.i immun. 33 no.5:65-66 MY '62. (MIRA 15:8)

1. Iz Chitinskogo meditsinskogo instituta i Oblastnoy sanitarno-epidemilogicheskoy stantsii.
(CHITA--DIPHTHERIA)

KORNILOV, I., MITNIK, I.

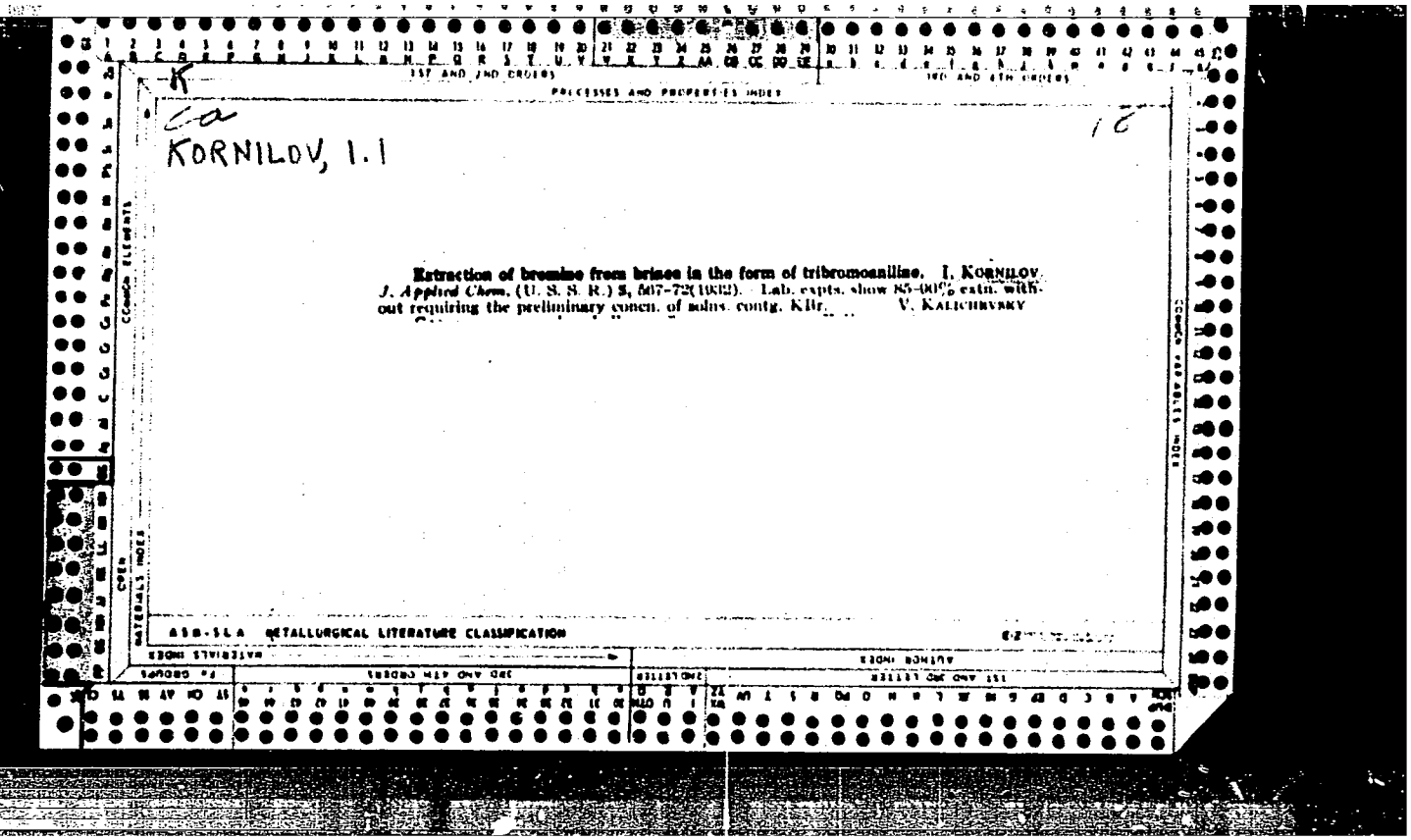
Work of our administration. Stroitel' no.2:2-5 F '58.
(MIRA 11:2)

1.Nachal'nik UNR-752 (for Kornilov). 2. Glavnyy inzhener UNR-752 (for Mitnik).

(Building)

KORNILOV, I.; FILIMONOV, I.

Antiaircraft defense propaganda by visual means. Voen.znan. 35 no.1:32 Ja '59. (MIRA 12:5)
(Kharkov--Air defenses)



K

Ca

KORNILOV, I.I

16

Extraction of bromine from brines in the form of tribromoaniline. I. KORNILOV, V. KALICHEVSKY. *J. Applied Chem.* (U. S. S. R.) **5**, 567–72(1932). Lab. expts. show 85-90% extn. without requiring the preliminary concn. of salts. contg. KBr.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION